



SPEC® CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

SPECfp®_rate2006 = 216

IBM System x3500 M3 (Intel Xeon E5649)

SPECfp_rate_base2006 = 211

CPU2006 license: 11

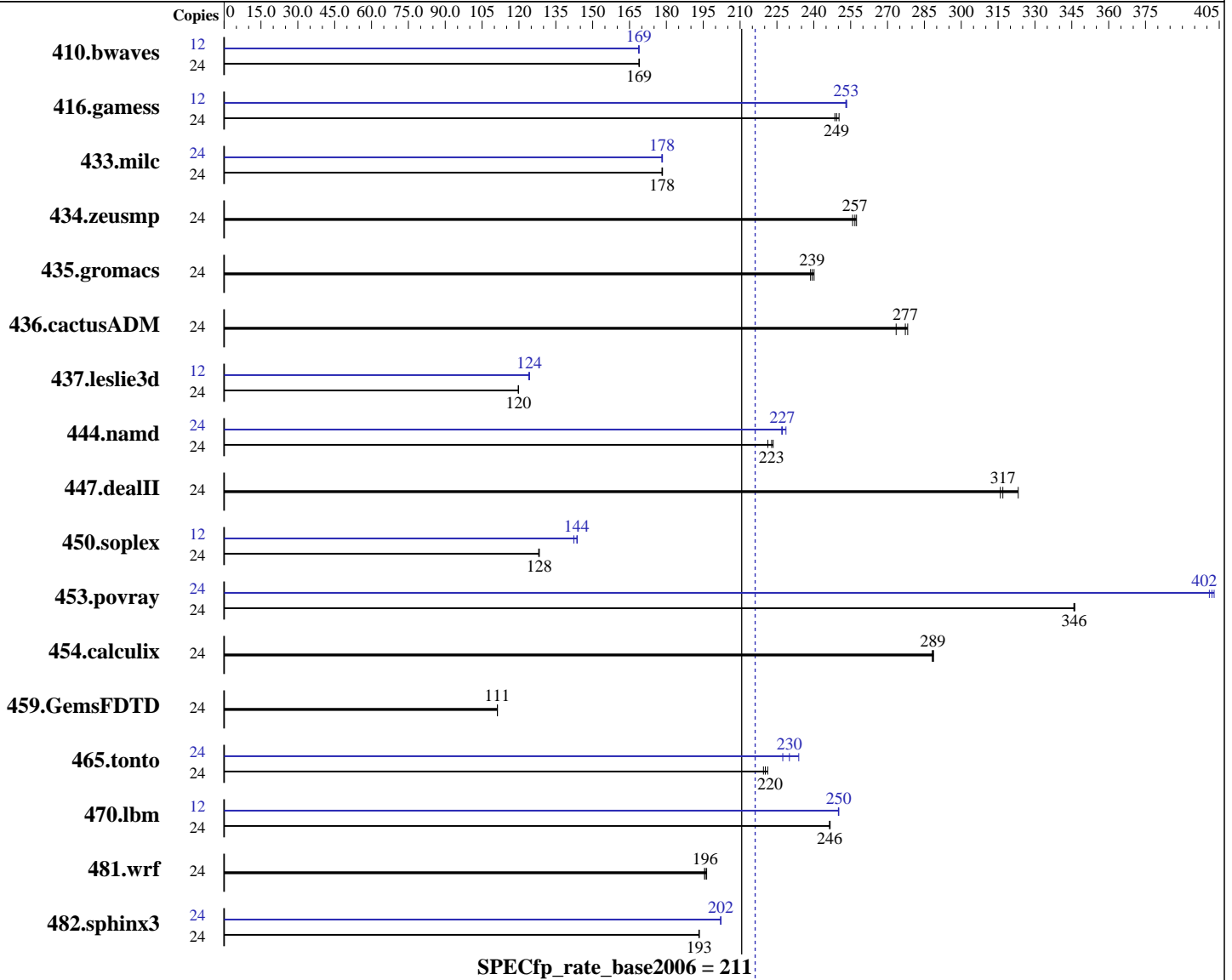
Test date: Mar-2011

Test sponsor: IBM Corporation

Hardware Availability: Feb-2011

Tested by: IBM Corporation

Software Availability: Jan-2011



Hardware

CPU Name: Intel Xeon E5649
 CPU Characteristics: Intel Turbo Boost Technology up to 2.93 GHz
 CPU MHz: 2533
 FPU: Integrated
 CPU(s) enabled: 12 cores, 2 chips, 6 cores/chip, 2 threads/core
 CPU(s) orderable: 1,2 chips
 Primary Cache: 32 KB I + 32 KB D on chip per core
 Secondary Cache: 256 KB I+D on chip per core

Continued on next page

Software

Operating System: SUSE Linux Enterprise Server 11 SP1 (x86_64), Kernel 2.6.32.12-0.7-default
 Compiler: Intel C++ and Fortran Intel 64 Compiler XE for applications running on Intel 64 Version 12.0.1.116 Build 20101116
 Auto Parallel: No
 File System: ext3
 System State: Run level 3 (multi-user)
 Base Pointers: 64-bit

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

SPECfp_rate2006 = 216

IBM System x3500 M3 (Intel Xeon E5649)

SPECfp_rate_base2006 = 211

CPU2006 license: 11

Test date: Mar-2011

Test sponsor: IBM Corporation

Hardware Availability: Feb-2011

Tested by: IBM Corporation

Software Availability: Jan-2011

L3 Cache: 12 MB I+D on chip per chip
Other Cache: None
Memory: 96 GB (12 x 8 GB 2Rx4 PC3-10600R-9, ECC)
Disk Subsystem: 1 x 146 GB SAS, 15000 RPM
Other Hardware: None

Peak Pointers: 32/64-bit
Other Software: None

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	24	<u>1930</u>	<u>169</u>	1930	169	1932	169	12	<u>966</u>	<u>169</u>	966	169	965	169
416.gamess	24	1878	250	1890	249	<u>1885</u>	<u>249</u>	12	929	253	<u>928</u>	<u>253</u>	927	253
433.milc	24	<u>1236</u>	<u>178</u>	1236	178	1235	178	24	1235	178	1237	178	<u>1236</u>	<u>178</u>
434.zeusmp	24	854	256	<u>851</u>	<u>257</u>	849	257	24	854	256	<u>851</u>	<u>257</u>	849	257
435.gromacs	24	714	240	<u>716</u>	<u>239</u>	718	239	24	714	240	<u>716</u>	<u>239</u>	718	239
436.cactusADM	24	1049	274	1031	278	<u>1034</u>	<u>277</u>	24	1049	274	1031	278	<u>1034</u>	<u>277</u>
437.leslie3d	24	<u>1883</u>	<u>120</u>	1885	120	1882	120	12	910	124	<u>908</u>	<u>124</u>	908	124
444.namd	24	<u>864</u>	<u>223</u>	870	221	861	223	24	<u>847</u>	<u>227</u>	848	227	842	229
447.dealII	24	869	316	<u>866</u>	<u>317</u>	850	323	24	869	316	<u>866</u>	<u>317</u>	850	323
450.soplex	24	1561	128	<u>1561</u>	<u>128</u>	1563	128	12	703	142	<u>697</u>	<u>144</u>	696	144
453.povray	24	369	346	<u>369</u>	<u>346</u>	369	346	24	318	401	317	403	<u>318</u>	<u>402</u>
454.calculix	24	<u>686</u>	<u>289</u>	687	288	686	289	24	<u>686</u>	<u>289</u>	687	288	686	289
459.GemsFDTD	24	<u>2290</u>	<u>111</u>	2289	111	2290	111	24	<u>2290</u>	<u>111</u>	2289	111	2290	111
465.tonto	24	<u>1072</u>	<u>220</u>	1076	220	1067	221	24	1010	234	1039	227	<u>1027</u>	<u>230</u>
470.lbm	24	1338	246	1337	247	<u>1338</u>	<u>246</u>	12	659	250	<u>659</u>	<u>250</u>	660	250
481.wrf	24	1365	196	<u>1369</u>	<u>196</u>	1371	196	24	1365	196	<u>1369</u>	<u>196</u>	1371	196
482.sphinx3	24	2421	193	2419	193	<u>2419</u>	<u>193</u>	24	<u>2314</u>	<u>202</u>	2315	202	2314	202

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Submit Notes

The config file option 'submit' was used.
numactl was used to bind copies to the cores

Operating System Notes

```
'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run
'mount -t hugetlbfs nodev /mnt/hugepages' was used to enable large pages
echo 10800 > /proc/sys/vm/nr_hugepages
export HUGETLB_MORECORE=yes
export LD_PRELOAD=/usr/lib64/libhugetlbfs.so
```



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

SPECfp_rate2006 = 216

IBM System x3500 M3 (Intel Xeon E5649)

SPECfp_rate_base2006 = 211

CPU2006 license: 11

Test sponsor: IBM Corporation

Tested by: IBM Corporation

Test date: Mar-2011

Hardware Availability: Feb-2011

Software Availability: Jan-2011

Platform Notes

Turbo Mode enabled in BIOS
Turbo Boost set to Traditional in BIOS
CPU C-State enabled in BIOS
Data Reuse disabled in BIOS
Demand Scrub disabled in BIOS

General Notes

Binaries compiled on RHEL5.5

Base Compiler Invocation

C benchmarks:

icc -m64

C++ benchmarks:

icpc -m64

Fortran benchmarks:

ifort -m64

Benchmarks using both Fortran and C:

icc -m64 ifort -m64

Base Portability Flags

410.bwaves: -DSPEC_CPU_LP64
416.gamess: -DSPEC_CPU_LP64
433.milc: -DSPEC_CPU_LP64
434.zeusmp: -DSPEC_CPU_LP64
435.gromacs: -DSPEC_CPU_LP64 -nofor_main
436.cactusADM: -DSPEC_CPU_LP64 -nofor_main
437.leslie3d: -DSPEC_CPU_LP64
444.namd: -DSPEC_CPU_LP64
447.dealII: -DSPEC_CPU_LP64
450.soplex: -DSPEC_CPU_LP64
453.povray: -DSPEC_CPU_LP64
454.calculix: -DSPEC_CPU_LP64 -nofor_main
459.GemsFDTD: -DSPEC_CPU_LP64
465.tonto: -DSPEC_CPU_LP64
470.lbm: -DSPEC_CPU_LP64
481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX
482.sphinx3: -DSPEC_CPU_LP64



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

SPECfp_rate2006 = 216

IBM System x3500 M3 (Intel Xeon E5649)

SPECfp_rate_base2006 = 211

CPU2006 license: 11

Test date: Mar-2011

Test sponsor: IBM Corporation

Hardware Availability: Feb-2011

Tested by: IBM Corporation

Software Availability: Jan-2011

Base Optimization Flags

C benchmarks:

-xSSE4.2 -ipo -O3 -no-prec-div -static -ansi-alias

C++ benchmarks:

-xSSE4.2 -ipo -O3 -no-prec-div -static -ansi-alias

Fortran benchmarks:

-xSSE4.2 -ipo -O3 -no-prec-div -static

Benchmarks using both Fortran and C:

-xSSE4.2 -ipo -O3 -no-prec-div -static -ansi-alias

Peak Compiler Invocation

C benchmarks (except as noted below):

icc -m64

482.sphinx3: icc -m32

C++ benchmarks (except as noted below):

icpc -m64

450.soplex: icpc -m32

Fortran benchmarks:

ifort -m64

Benchmarks using both Fortran and C:

icc -m64 ifort -m64

Peak Portability Flags

410.bwaves: -DSPEC_CPU_LP64
 416.gamess: -DSPEC_CPU_LP64
 433.milc: -DSPEC_CPU_LP64
 434.zeusmp: -DSPEC_CPU_LP64
 435.gromacs: -DSPEC_CPU_LP64 -nofor_main
 436.cactusADM: -DSPEC_CPU_LP64 -nofor_main
 437.leslie3d: -DSPEC_CPU_LP64
 444.namd: -DSPEC_CPU_LP64
 447.dealII: -DSPEC_CPU_LP64
 453.povray: -DSPEC_CPU_LP64
 454.calculix: -DSPEC_CPU_LP64 -nofor_main
 459.GemsFDTD: -DSPEC_CPU_LP64
 465.tonto: -DSPEC_CPU_LP64

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

SPECfp_rate2006 = 216

IBM System x3500 M3 (Intel Xeon E5649)

SPECfp_rate_base2006 = 211

CPU2006 license: 11

Test date: Mar-2011

Test sponsor: IBM Corporation

Hardware Availability: Feb-2011

Tested by: IBM Corporation

Software Availability: Jan-2011

Peak Portability Flags (Continued)

470.lbm: -DSPEC_CPU_LP64

481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX

Peak Optimization Flags

C benchmarks:

433.milc: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -static -auto-ilp32

470.lbm: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -opt-malloc-options=3
-ansi-alias -opt-prefetch -static -auto-ilp32

482.sphinx3: -xSSE4.2 -ipo -O3 -no-prec-div -unroll2

C++ benchmarks:

444.namd: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -fno-alias
-auto-ilp32

447.dealII: basepeak = yes

450.soplex: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -opt-malloc-options=3
-B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT

453.povray: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -unroll4 -ansi-alias
-B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

Fortran benchmarks:

410.bwaves: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -static

416.gamess: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -unroll2
-inline-level=0 -scalar-rep- -static

434.zeusmp: basepeak = yes

437.leslie3d: -xSSE4.2 -ipo -O3 -no-prec-div
-B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

459.GemsFDTD: basepeak = yes

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

SPECfp_rate2006 = 216

IBM System x3500 M3 (Intel Xeon E5649)

SPECfp_rate_base2006 = 211

CPU2006 license: 11

Test date: Mar-2011

Test sponsor: IBM Corporation

Hardware Availability: Feb-2011

Tested by: IBM Corporation

Software Availability: Jan-2011

Peak Optimization Flags (Continued)

```
465.tonto: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -unroll4 -auto
-inline-calloc -opt-malloc-options=3
-B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT
```

Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes

436.cactusADM: basepeak = yes

454.calculix: basepeak = yes

481.wrf: basepeak = yes

The flags files that were used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revB.html>

<http://www.spec.org/cpu2006/flags/IBM-platform-linux64-revA.20110420.html>

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revB.xml>

<http://www.spec.org/cpu2006/flags/IBM-platform-linux64-revA.20110420.xml>

SPEC and SPECfp are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.1.

Report generated on Wed Jul 23 20:00:41 2014 by SPEC CPU2006 PS/PDF formatter v6932.

Originally published on 20 April 2011.

Standard Performance Evaluation Corporation

info@spec.org

<http://www.spec.org/>